This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-5 (canceled)

Claim 6 (currently amended): A system ~~for processing information represented by an optical signal~~ in a headend of an HFC cable arrangement ~~to provide a service~~, the system comprising:

an optical receiver for converting ~~the~~ an upstream optical signal to a composite baseband signal representing a plurality of information streams;

a demultiplexing device responsive to the composite baseband signal for generating the plurality of information streams;

a plurality of modulators, coupled to said demultiplexing device, each of the plurality of modulators corresponding to a different one of the plurality of information streams, each modulator for producing a corresponding modulated analog signal from one of said plurality of information streams;

a combiner for combining a plurality of modulated analog signals generated by said modulators to produce a combined modulated analog signal; and

a subsystem for processing the combined modulated analog signal to realize the service.

Claim 7 (currently amended): The system of claim 6,

wherein the upstream optical signal includes data from a plurality of different user terminals; and

wherein the subsystem for processing recovers data from respective ones of the different user terminals and reformats

the recovered data into Internet Protocol (IP) packets as part of ~~service includes~~ an interactive service.

Claim 8 (original): The system of claim 6 wherein the at least one information stream includes data bits.

Claim 9 (original): The system of claim 6 further comprising an apparatus for providing cable television, which is different from the service.

Claim 10 (original): The system of claim 9 wherein a signal representing the cable television travels in a direction different from that of the optical signal in the HFC cable arrangement.

Claim 11 (original): The system of claim 6 wherein the subsystem includes a device for modulating a designated carrier with the at least one information stream to form a modulated signal.

Claim 12 (original): The system of claim 6 wherein the subsystem includes a cable modem termination system (CMTS).

Claim 13 (previously presented): The system of claim 12 wherein the CMTS includes an analog input interface.

Claim 14 (original): The system of claim 6 wherein the composite baseband signal is encoded in accordance with an error correction coding technique.

Claim 15-25 (canceled):

Claim 26 (currently amended): A method ~~for processing information represented by~~ of operating ~~an optical signal in~~ a headend of an HFC cable arrangement ~~to provide a service~~, the method comprising:

receiving an upstream optical signal;

converting the received upstream optical signal to a composite baseband signal representing a plurality of information streams;

~~in response to the composite baseband signal,~~ generating from the composite baseband signal, the plurality of information streams;

modulating at least some of said plurality of information streams to produce modulated analog signals, a separate modulated analog signal being produced from each of said at least some of said plurality of information streams;

combining a plurality of said separate modulated analog signals generated to produce a combined modulated analog signal;

and processing the combined modulated analog signal to realize the service.

Claim 27 (currently amended): The method of claim 26,

wherein the upstream optical signal includes data from a plurality of different user terminals; and

wherein processing the combined modulated analog signal to realize the service includes:

recovering data from respective ones of the different user terminals from said combined modulated signal and reformatting at least some of the recovered data into Internet Protocol (IP) packets as part of ~~service includes~~ an interactive service.

Claim 28 (original): The method of claim 26 wherein the at least one information stream includes data bits.

Claim 29 (original): The method of claim 26 wherein in processing the at least one information stream, a designated carrier is modulated with the at least one information stream to form a modulated signal.

Claim 30 (original): The method of claim 26 wherein the composite baseband signal is encoded in accordance with an error correction coding technique.

Claim 31-32 (canceled):

Claim 33 (currently amended) The system of claim ~~33~~ 6, wherein said subsystem for processing the combined modulated analog signal has an analog input interface for receiving said combined modulated analog signal.

Claim 34 (currently amended) The method of claim 26 ~~36~~, wherein
modulating at least some of said plurality of information streams includes modulating each of the at least some of said plurality of information streams using a different carrier frequency corresponding to a separate channel.

Claim 35 (previously presented): The method of claim 34, wherein
processing the combined modulated analog signal to realize the service includes:
recovering data from individual user terminals; and
reformatting the data into Internet Protocol packets.

Claim 36 (previously presented): The method of claim 34, wherein processing the combined modulated analog signal to realize the service includes:

recovering data from individual user terminals; and

reformatting the data into ATM cells.

Claim 37 (new) The method of claim 26,

wherein receiving said upstream optical signal includes receiving said upstream optical signal from a distribution node which is coupled to the headend by an optical fiber, said distribution node being coupled to a plurality of user terminals.

Claim 38 (new) The system of claim 6,

wherein said headend is coupled to a distribution node by an optical fiber which supplies said optical receiver with said upstream optical signal and which receives a downstream optical signal from said headend.